ABSTRACT

A reaction gas made of a hydrogen-based carrier gas and a silane gas or the like is brought in contact with a heated catalyzer of tungsten or the like, and a DC voltage not higher than a glow discharge starting voltage or a voltage produced by superimposing an AV voltage or an RF voltage on the DC voltage is applied on the produced reactive species, so as to provide kinetic energy and carry out vapor growth of a predetermined film on a substrate, thereby providing a film of high quality.